Patent
Attorney's Docket No. 032751-052

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of	
Jean-Marc BALLOUL et al.	Group Art Unit: Unassigned
Application No.: New Application	Examiner: Unassigned
Filed: April 12, 2001	
For: POXVIRUS WITH TARGETED INFECTION SPECIFICITY	

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination, please amend the above-captioned application as follows:

IN THE CLAIMS:

Kindly replace claims 1, 3-6, 10, 11, 14, 16-20 and 22, as follows.

1. (Amended) A poxviral particle having a targeted infection specificity towards target cells wherein said particle infects said target cells and wherein said specificity is conferred by at least one heterologous ligand moiety which is localized at the surface of said poxviral particle and which is capable of binding an anti-ligand molecule localized at the surface of said target cells, with the proviso that when said poxviral particle is an EEV vaccinia virus particle said ligand is not an antibody directed to ErbB-2.

3. (Amended) The poxviral particle of claim 1, wherein said vaccinia virus is selected from the group consisting of Copenhagen, Wyeth and Ankara modified (MVA) strains.

4. (Amended) The poxviral particle of claim 1, wherein said poxviral particle is an IMV.

5. (Amended) The poxviral particle of claim 1, wherein said target cells are tumoral cells and said heterologous ligand moiety is capable of binding a tumor-specific antigen, a cellular protein differentially or overexpressed onto said tumoral cells or a gene product of a cancer-associated virus.

6. (Amended) The poxviral particle of claim 1, wherein said heterologous ligand moiety is a fragment of an antibody capable of recognizing and binding to the MUC-1 antigen.

10. (Amended) The poxviral particle of claim 8, wherein said heterologous ligand moiety is fused to the N-terminus of the expression product of the A27L gene.

11. (Amended) The poxviral particle of claim 1, wherein said heterologous ligand moiety comprises a signal peptide facilitating its insertion in the envelope of said poxviral particle.

14. (Amended) The poxviral particle of claim 1, wherein said poxviral particle comprises at least a nucleic acid of interest.

16. (Amended) A vector comprising at least one nucleotide sequence encoding a chimeric protein comprising (i) at least an heterologous ligand moiety as defined in claim 1, and (ii) all or part of an homologous viral polypeptide naturally localized at the surface of a poxviral particle.

17. (Amended) The vector of claim 16 wherein said homologous viral polypeptide is selected from the group consisting of the expression products of the A27L, L1R, A14L, A17L, D8L and H3L genes.

18. (Amended) A composition comprising at least one poxviral particle of claim 1 and a pharmaceutically acceptable vehicle.

19. (Amended) A method for the treatment of a human or animal organism by gene therapy comprising administering an effective amount of the poxviral particle according to claim 1 to a human or animal in need of such treatment.

20. (Amended) A method for the purification of a poxviral particle of claim 1 from a viral preparation containing both said poxviral particle and a wild type poxviral particle, comprising the steps of binding said viral preparation to a solid support coated

with an antiligand molecule capable of binding said heterologous ligand moiety and recovering said poxviral particle.

22. (Amended) The method according to claim 20, further comprising the step of infecting a permissive cell with said recovered poxviral particle.

REMARKS

Entry of the foregoing Amendment is respectfully requested.

Should the Examiner have any questions concerning the subject application, a telephone call to the undersigned would be appreciated.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By: _____
Teresa Stanek Rea
Registration No. 30,427

P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620

Date: April 12, 2001

Attachment to Preliminary Amendment dated April 11, 2001

Marked-up Claims 1, 3-6, 10, 11, 14, 16-20 and 22

1. (Amended) A poxviral particle having a targeted infection specificity towards target cells wherein said particle infects [preferably] said target cells and wherein said specificity is conferred by at least one heterologous ligand moiety which is localized at the surface of said poxviral particle and which is capable of binding an anti-ligand molecule localized at the surface of said target cells, with the proviso that when said poxviral particle is an EEV vaccinia virus particle said ligand is not an antibody directed to ErbB-2.

3. (Amended) The poxviral particle of claim 1 [or 2], wherein said vaccinia virus is selected from the group consisting of Copenhagen, Wyeth and Ankara modified (MVA) strains.

4. (Amended) The poxviral particle of [any of claims 1 to 3] claim 1, wherein said poxviral particle is an IMV.

5. (Amended) The poxviral particle of [any of claims 1 to 4] claim 1, wherein said target cells are tumoral cells and said heterologous ligand moiety is capable of binding a tumor-specific antigen, a cellular protein differentially or overexpressed onto said tumoral cells or a gene product of a cancer-associated virus.

Attachment to Preliminary Amendment dated April 11, 2001

Marked-up Claims 1, 3-6, 10, 11, 14, 16-20 and 22

6. (Amended) The poxviral particle of [any of claims 1 to 5] claim 1, wherein said heterologous ligand moiety is a fragment of an antibody capable of recognizing and binding to the MUC-1 antigen.

10. (Amended) The poxviral particle of claim 8 [or 9], wherein said heterologous ligand moiety is fused to the N-terminus of the expression product of the A27L gene.

11. (Amended) The poxviral particle of [any of claims 1 to 10] claim 1, wherein said heterologous ligand moiety comprises a signal peptide facilitating its insertion in the envelope of said poxviral particle.

14. (Amended) The poxviral particle of [any of claims 1 to 13] claim 1, wherein said poxviral particle comprises [comprises] at least a nucleic acid of interest.

16. (Amended) A vector comprising at least one nucleotide sequence encoding a chimeric protein comprising (i) at least an heterologous ligand moiety as defined in [any of claims 1 and 5 to 8] claim 1, and (ii) all or part of an homologous viral polypeptide naturally localized at the surface of a poxviral particle.

Attachment to Preliminary Amendment dated April 11, 2001

Marked-up Claims 1, 3-6, 10, 11, 14, 16-20 and 22

17. (Amended) The vector of claim 16 wherein said homologous viral polypeptide is [as defined in claim 9] selected from the group consisting of the expression products of the A27L, L1R, A14L, A17L, D8L and H3L genes.

18. (Amended) A composition comprising at least one poxviral particle of [any of claims 1 to 15 or at least one vector of claim 16 or 17] claim 1 and a pharmaceutically acceptable vehicle.

19. (Amended) [Use of a poxviral particle of any of claims 1 to 15 or of a vector of claim 16 or 17 for the preparation of a drug intended] A method for the treatment of a human or animal organism by gene therapy comprising administering an effective amount of the poxviral particle according to claim 1 to a human or animal in need of such treatment.

20. (Amended) A method for the purification of a poxviral particle of [any of claims 1 to 15] claim 1 from a viral preparation containing both said poxviral particle and a wild type poxviral particle, comprising the steps of binding said viral preparation to a solid support coated with an antiligand molecule capable of binding said heterologous ligand moiety and recovering said poxviral particle.

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Marked-up Claims 1, 3-6, 10, 11, 14, 16-20 and 22

22. (Amended) The method according to claim 20 [or 21], further comprising the step of infecting a permissive cell with said recovered poxviral particle.